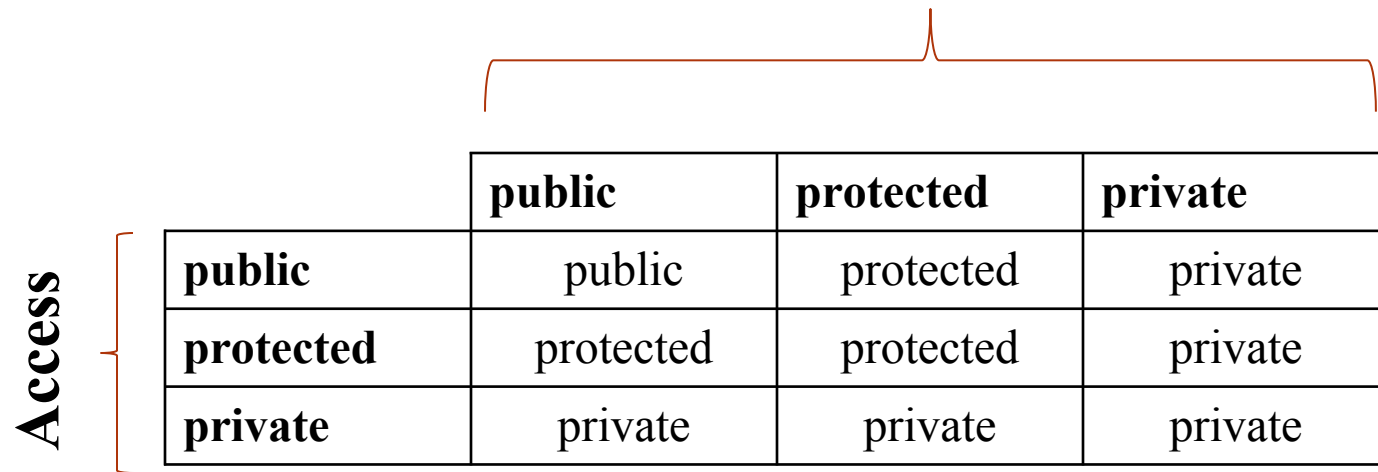


# Public, Protected, and Private Inheritance

# Inheritance access chart

## Inheritance



The diagram illustrates the inheritance access rules for a 3x3 matrix. A vertical bracket on the left, labeled 'Access', groups the rows. A horizontal bracket above the columns, labeled 'Inheritance', groups the columns. The matrix shows how the access level of a base class is inherited by a derived class.

	<b>public</b>	<b>protected</b>	<b>private</b>
<b>public</b>	public	protected	private
<b>protected</b>	protected	protected	private
<b>private</b>	private	private	private

# Example 1

```
class A{
private: int priA;
protected: int proA;
public: int pubA;
    void displayA(){
        cout<<priA<<proA<<pubA;
    }
};

class B : public A{
private: int priB;
protected: int proB;
public: int pubB;
    void displayB(){
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
    }
};

int main(){
    A objA; B objB;
    cout<<objA.priA << objA.proA
    <<objA.pubA<<endl;
    cout<<objB.priA << objB.proA << objB.pubA
    <<endl;
    cout<<objB.priB << objB.proB
```

## Example 2

```
class A{
private: int priA;
protected: int proA;
public: int pubA;
    void display(){
        cout<<priA<<proA<<pubA;
    }
};

class B : protected A{
private: int priB;
protected: int proB;
public: int pubB;
    void display(){
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
    }
};

int main(){
    A objA; B objB;
    cout<<objA.priA << objA.proA
    <<objA.pubA<<endl;
    cout<<objB.priA <<objB.proA << objB.pubA
    <<endl;
    cout<<objB.priB << objB.proB
```

```

class A{
private: int priA;
protected: int proA;
public: int pubA;
    void display(){
        cout<<priA<<proA<<pubA;
    }
};

class B : private A{
private: int priB;
protected: int proB;
public: int pubB;
    void display(){
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
    }
};

int main(){
    A objA; B objB;
    cout<<objA.priA << objA.proA
    <<objA.pubA<<endl;
    cout<<objB.priA <<objB.proA << objB.pubA
    <<endl;
    cout<<objB.priB << objB.proB

```

```

class A{
private: int priA;
protected: int proA;
public: int pubA;
    void display(){
        cout<<priA<<proA<<pubA;
    }
};

```

```

class B : public A{
private: int priB;
protected: int proB;
public: int pubB;
    void display(){
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
    }
};

```

```

class C : public B{
private: int priC;
protected: int proC;
public: int pubC;
    void display(){
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
        cout<<priC<<proC<<pubC;
    }
};

```

```

int main(){
    A objA; B objB; C objC;
    cout<<objA.priA << objA.proA
    <<objA.pubA<<endl;
    cout<<objB.priA << objB.proA
    <<objB.pubA<<endl;
    cout<<objB.priB << objB.proB
    <<objB.pubB<<endl;
    cout<<objC.priA << objC.proA
    <<objC.pubA<<endl;
    cout<<objC.priB << objC.proB
    <<objC.pubB<<endl;
    cout<<objC.priC << objC.proC
    <<objC.pubC<<endl;
}

```

**Example**

**4**

```

class A {
private: int priA;
protected: int proA;
public: int pubA;
    void display() {
        cout<<priA<<proA<<pubA;
    }
};

```

```

class B : protected A {
private: int priB;
protected: int proB;
public: int pubB;
    void display() {
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
    }
};

```

```

class C : public B {
private: int priC;
protected: int proC;
public: int pubC;
    void display() {
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
        cout<<priC<<proC<<pubC;
    }
};

```

```

int main() {
    A objA; B objB; C objC;
    cout<<objA.priA << objA.proA
    <<objA.pubA<<endl;
    cout<<objB.priA << objB.proA
    <<objB.pubA<<endl;
    cout<<objB.priB << objB.proB
    <<objB.pubB<<endl;
    cout<<objC.priA << objC.proA
    <<objC.pubA<<endl;
    cout<<objC.priB << objC.proB
    <<objC.pubB<<endl;
    cout<<objC.priC << objC.proC
    <<objC.pubC<<endl;
}

```

**Example**

**5**

```

class A{
private: int priA;
protected: int proA;
public: int pubA;
    void display(){
        cout<<priA<<proA<<pubA;
    }
};

```

```

class B : private A{
private: int priB;
protected: int proB;
public: int pubB;
    void display(){
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
    }
};

```

```

class C : public B{
private: int priC;
protected: int proC;
public: int pubC;
    void display(){
        cout<<priA<<proA<<pubA;
        cout<<priB<<proB<<pubB;
        cout<<priC<<proC<<pubC;
    }
};

```

```

int main(){
    A objA; B objB; C objC;
    cout<<objA.priA << objA.proA
    <<objA.pubA<<endl;
    cout<<objB.priA << objB.proA
    <<objB.pubA<<endl;
    cout<<objB.priB << objB.proB
    <<objB.pubB<<endl;
    cout<<objC.priA << objC.proA
    <<objC.pubA<<endl;
    cout<<objC.priB << objC.proB
    <<objC.pubB<<endl;
    cout<<objC.priC << objC.proC
    <<objC.pubC<<endl;
}

```

**Example**

**6**